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METHOD FOR RETRIEVING VEHICULAR COLLATERAL

This application is a continuation of application serial No. 09/403,419 filed 6-24-98, now U.S. Patent No. 6,025,774.

Field of the Invention

The present invention relates generally to a method of collateral retrieval, and more particularly to a method of retrieving vehicular collateral in which a transmitter is installed in the vehicle which provides locational data.

Background of the Invention

Generally, vehicles such as automobiles have been financed through a personal loan system, whereby the purchaser borrows money from a financial or lending institution, takes title to the automobile and pays the loan balance in monthly payments which amortize the full amount of the loan. Typically, the financial institution retains a lien interest against the title of the vehicle and the loan is secured by a chattel mortgage thereon. The financial institution may confiscate or repossess the vehicle upon a default condition of the loan, as agreed to by the purchaser or as provided at law. It is contemplated that a default condition may arise where the loan payments are delinquent for a predetermined interval. Thus, the vehicle is used as collateral for the loan used to purchase the vehicle.

Additionally, lease arrangements are entered into whereby the lessee makes monthly rental payment, returning the vehicle to the lessor at the end of a predetermined term specified in the lease. Title typically remains with the lessor. It is sometimes specified in the lease that

the lessee may at the lessee's option purchase the vehicle when the lease expires. In the event that the lessee defaults in making lease payments, the lessor may confiscate or repossess the vehicle.

5 Thus, upon a default condition of the loan or lease (these terms may be used interchangeably herein) the lending institution may seek to confiscate the loan collateral, i.e., the vehicle. Thus, the lending institution will authorize repossession personnel to
10 confiscate the vehicle. Such confiscation processes may potentially require extensive resources and result in a time consumptive, expensive endeavor. Typically, the repossession personnel being the confiscation process with nothing more than the vehicle holder's last known billing
15 address. Not only may such address be no longer valid, the vehicle may not be kept or stored at such location. Moreover, the individual responsible for the loan may even be actively avoiding being located and the vehicle being repossessed.

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Summary of the Invention

In accordance with the present invention, there is provided a method of securing collateral for a loan when indicated by a loan status wherein the collateral is a
25 vehicle. The method provides for installing a transmitter within the vehicle. The transmitter is capable of transmitting locational data regarding the vehicle. The loan status is monitored for a default condition. A data link is established from a base terminal to the transmitter
30 of the vehicle upon an occurrence of the default condition in the loan status. Locational data is transmitted from the transmitter of the vehicle to the base terminal via the

data link. The location of the vehicle is determined from the locational data transmitted to the base terminal. Finally, the vehicle is confiscated.

Preferably, the data link is established at
5 predetermined intervals and locational data from the transmitter to the base terminal is transmitted via the data link to verify the operation of the transmitter. In addition, the transmitter is capable of sensing any physical tampering therewith and a tamper signal is
10 transmitted in response to any sensed tampering via data link. Advantageously, the transmitter may be powered with a rechargeable battery. Furthermore, the method of the present invention may provide for deactivating the vehicle and enabling a vehicle alarm upon the loan status being in
15 a default condition. In other embodiments of the present invention, the transmitter may be a cellular telephone and locational data may be based upon Global Positioning Satellite (GPS) technology.

As such, based on the foregoing, the present invention
20 mitigates the inefficiencies and limitations associated with prior art methods of retrieving vehicular collateral. Advantageously, the method of the present invention facilitates expedient location and confiscation of vehicular collateral. The transmitter allows a lending
25 institution to virtually instantaneously determine the location of a collateralized vehicle upon the loan status being in a default condition. In addition, the method may utilize current GPS technology to determine with a high degree of precision the location of the vehicle. Further
30 still, the method may provide for an alarm within the vehicle to be enabled so as to further facilitate location and confiscation of the vehicle. In comparison, traditional methods of vehicular collateral retrieval

typically begin with the lending institution via an agent thereof using only the last documented address for the individual responsible for the loan. Not only may such address be no longer valid, the vehicle may not be kept or stored at such location. Moreover, the individual responsible for the loan may even be actively avoiding being located and the vehicle being repossessed. As such, vehicle confiscation process may potentially be long and costly.

10 Additionally, the method of the present invention preferably provides for a verification process of operability of the transmitter. As such, the lending institution is able to test the installed transmitter by having the transmitter periodically send signals. Further, 15 the method provides for the transmitter to alert the lending institution if the transmitter is tampered with. Thus, the lending institution has the benefit being confident that there is a high probability of retrieving the vehicle, should such course of action be necessary, by 20 being able both verify the operability of the transmitter and having a tamper alert system in place.

Accordingly, the present invention represents a significant advance in the art.

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Brief Description of the Drawings

These, as well as other features of the present invention, will become more apparent upon reference to the drawings wherein:

30 Figure 1 symbolically depicts vehicle retrieval apparatus and system configuration utilized in the preferred embodiment of the present invention; and

Figure 2 a flow diagram of steps of the method of the present invention.

Detailed Description of the Preferred Embodiment

5 Referring now to the drawings wherein the showings are for purposes of illustrating a preferred embodiment of the present invention only, and not for purposes of limiting the same, Figures 1 and 2 illustrate a method of retrieving vehicular collateral in accordance with the present
10 invention.

As a preliminary matter, it is contemplated that a lending institution makes 26 a loan/lease arrangement with a borrower respecting a vehicle 10. The vehicle 10 is used as collateral for the loan. Whether the vehicle 10 is
15 purchased, leased or rented, it is understood that the party seeking to secure, confiscate, repossess or otherwise seize the vehicle may be a bank, savings and loan, mortgage company, credit union, vehicle dealership, vehicle manufacturer, leasing agent, collection agency, or any
20 other lending/financial institution and agents thereof. It is further understood that the holder or possessor of the vehicle may be the individual responsible for payment of the vehicle loan/lease and may be referred to as the purchaser, debtor, borrower or lessee. For purposes of the
25 present invention, the term vehicle 10 is contemplated to include automobiles, trucks, motor cycles, boats, house boats, airplanes, helicopters, house trailers, mobile homes, recreational vehicles, heavy machinery (such as tractors) and other devices used for transportation.

30 In accordance with the present invention, there is provided a method of securing vehicular collateral when indicated by a loan status. The loan status may have a

paid current condition and a default condition. When the loan status is in a default condition, it is contemplated that the lending institution may be entitled to confiscate or repossess the vehicle 10.

5 The method provides for installing 28 a transmitter 14 within the vehicle 10. The transmitter 14 is capable of transmitting locational data regarding the vehicle 10. The loan status is monitored 30 for a default condition 32. Upon an occurrence of the default condition 32 in the loan
10 status, a data link is established 34 from a base terminal 20 to the transmitter 14 of the vehicle 10. Locational data is transmitted 42 from the transmitter 14 of the vehicle 10 to the base terminal 20 via the data link. The location of the vehicle 10 is determined 46 from the
15 locational data transmitted to the base terminal 20. Thus, as early as the loan status having entered into a default condition, the general whereabouts of the collateralized vehicle 10 may be known to the lending institution, e.g., the base terminal 20. Finally, the method provides for the
20 vehicle 10 to be confiscated 48, and thus completing the collateral securing process.

In the preferred embodiment of the method of the present invention, a retrieval apparatus 12 is installed 28 in the vehicle 10. The retrieval apparatus 12 is provided
25 with the transmitter 14, a base communication receiver 16 and a controller 18. It is contemplated that the transmitter 14 and base communication receiver 16 may be the same device, i.e., a transceiver. Furthermore, the transmitter 14 and base communication receiver 16 may take
30 the form of a cellular telephone or other communications device. The transmitter 14 and the base communication receiver 16 are capable of respectively transmitting and receiving signals to and from the base terminal 20. Such

signals are distinct electromagnetic digital signals which may be RF signal, for example. It is contemplated that the retrieval apparatus 12 need not necessarily be provided with a base communication receiver 16. Thus, the retrieval
5 apparatus 12 may be passive in nature and may periodically or constantly transmit locational signals.

The transmitter 14 and base communication receiver 16 are electrically connected to a controller 18. The controller 18 may be any type of digital processing device,
10 or computer, such as a microprocessor. The use of a microprocessor as the controller 18 provides for versatility in programmability and provides for an apparatus which can be made as small in size as possible. By providing for an apparatus which is an small in size as
15 possible, a more concealed installation of the retrieval apparatus 12 in the vehicle 10 can be achieved.

In operation, the base terminal 20 may be in electrical communication with a computer network of the lending institution. The computer network contains data
20 respecting the status of the loan. Upon the loan status being in a default condition 32, the base terminal 20 originates and transmits 36 a transmit request signal. The base communication receiver 16 is configured to receive the transmit request signal from the base terminal 20. Thus,
25 a data link is established 34 between the base terminal 20 and retrieval apparatus 12 disposed within the vehicle 10. The base communication receiver 16 receives 38 the transmit request signal and the controller 18 processes the transmit request signal. In response, the controller 18 initiates
30 the transmitter 14 to transmit 42 locational data of the vehicle 10 to the base terminal 20 via the data link.

It is contemplated that the loan status may further have a delinquent condition, wherein the loan is not paid

current. The default condition is one where the loan has not been paid current for a predetermined interval. Thus, typically prior to the loan status being in a default condition, the loan status will be in a delinquent condition. Such a delinquent condition may be used to trigger the transmission of a transmit request signal from the base terminal 20 to the retrieval apparatus 12 as discussed above. Thus, the method of the present invention may further include monitoring 30 the status of the loan to for a delinquent condition 50 and subsequently establishing 34 a data link from the base terminal 20 to the transmitter 14 upon an occurrence of the delinquent condition. The locational data received 44 by the base terminal 20 in response to the transmit request signal may be stored for future use. For example, in the event that the retrieval apparatus 12 is later damaged or inoperable and the loan status is in a default condition, the stored locational data may provide a valuable lead for the repossession personnel to locate and confiscate the vehicle 10.

Subsequent to the receipt of the transmit request signal by the base communication receiver 16, the vehicle locational data 40 is derived regarding the vehicle 10. Various methods deriving 40 such data may be utilized. It is contemplated that those methods of configuring a system to derive locational data respecting the location of the vehicle 10 utilizing a transmitter and/or receiver are chosen from those well known to one of ordinary skill in the art. In a very simple embodiment, the transmitted signals from the transmitter 14 themselves provide locational data. In this respect, such signals provide directional data which can be used to locate the emanating source, i.e., the transmitter 14 in the vehicle 10. In such an embodiment, the base terminal 20 may additionally

be mobile and directionally receive the transmitted signals. In another embodiment, the base terminal 20 may be in electronic communication with a plurality of mobile base terminals or an array of antennas which are
5 directionally sensitive and thereby facilitating triangulation techniques to locate the vehicle 10.

In the preferred embodiment of the present invention, however, Global Positioning Satellite (GPS) technology is used to derive 40 the locational data. The retrieval
10 apparatus 10 may further be provided with a GPS positioning signal receiver 22. A GPS data link is established from a global positioning satellite (GPS) 24 to the GPS positioning signal receiver 22 upon the receipt of the transmit request signal. A GPS positioning signal is
15 received by the GPS positioning signal receiver 22 via the GPS data link. As one of ordinary skill in the art will appreciate, the locational data is derivable from the GPS positioning signal. Such locational data is then transmitted 42, as described above. It is contemplated
20 that the GPS locational data provides very precise information as to the location of the vehicle 10, and therefore facilitates the efficient determination 46 of the location and the confiscation 48 of the vehicle 10.

In addition, the method of the present invention
25 provides for a system operability verification procedure. A data link is established 34 from the base terminal to the transmitter at predetermined intervals prior to any occurrence of a default condition. The base terminal 20 originates and transmits 36 a transmit request signal which
30 is received 38 by the base communication receiver 16. In response, the transmitter 14 of the vehicle 10 transmits 42 locational data back to the base terminal 20. The receipt of such locational data at the base terminal 20

successfully verifies the operation of the retrieval apparatus 12 including the transmitter 14 and the base communications receiver 16 therein. In addition, the received locational data may be stored for future use
5 should reference to such data be desired. In operation, such a verification procedure could be followed monthly, for example. In the event that locational data is not received by the base terminal 20, and therefore a failed verification occurs, the lending institution may follow-up
10 in contacting the borrower, and correct any problems or defects in the retrieval apparatus 12. Thus, such a verification procedure allows to the lending institution to increase its probability that the retrieval apparatus 12 will function as designed to facilitate the securing of the
15 collateralized vehicle 10.

The method of the present invention is preferably provided with a procedure of alerting the lending institution that the retrieval apparatus 12 has been physically tampered with. In this respect, the retrieval
20 apparatus 12 and/or components thereof (e.g., transmitter 14, base communication receiver 16, GPS positioning signal receiver 22, etc.) are configured to be capable of sensing any physical tampering therewith and transmitting a tamper signal in response to any sensed tampering. Thus, the data
25 link is established 34 from the base terminal 20 to the transmitter 14 upon the sensing 54 of any physical tampering with the retrieval apparatus 12. It is contemplated that the method of determining whether the retrieval apparatus 12 has been tampered with is chosen
30 from those well known to one of ordinary skill in the art and may include electrical and electro-mechanical devices. Advantageously, it is contemplated that such a tampering alert procedure increases the probability that the

retrieval apparatus 12 will function properly when desired because the lending institution may become aware of any such tampering prior to the loan entering into a default condition and the mere existence of the tampering alert
5 procedure may deter acts of intentional damage to the retrieval apparatus.

While the retrieval apparatus 12 may be solely powered via the electrical system of the vehicle 10, the retrieval apparatus 10 is preferably additionally powered with a
10 rechargeable battery. In such a configuration, the rechargeable battery is electrically connected to a generator/alternator of the vehicle 10 and is recharged during operation of the vehicle 10. Thus, the retrieval apparatus 12 may utilize the rechargeable battery as a
15 back-up or alternate power supply. Advantageously, use of a rechargeable battery mitigates against unwanted and possibly intentional deactivation of the retrieval apparatus 12 where the vehicle battery is disconnected or the vehicle 10 is not in use.

20 In addition to the base communication receiver 16 being able to receive transmit request signals, a vehicle alarm signal may also be received. In this regard, the vehicle 10 may be provided with an audio and/or visual devices which are in electrical communication with the
25 controller 18. Such devices may be the vehicle's horn, lights, speakers, etc. The method of the present invention provides for the transmitting of a vehicle alarm signal from the base terminal 20 to the base communication receiver 16 and receiving the vehicle alarm signal with the
30 base communication receiver 16. The vehicle alarm signal is then communicated to the controller 18 which electrically enables the vehicle alarm. Such an alarm enablement step is contemplated to facilitate the

determination of the exact location of the vehicle 10 once vehicle repossession personnel are within personal sensory range of the vehicle alarm system. Thus, while the locational data which is used by vehicle repossession
5 personnel may allow such personnel to be within the generally locality of the vehicle 10, the sounding of the vehicle horn or illumination vehicle headlamps may further facilitate finding the vehicle 10. This is especially the case where the vehicle 10 is hidden or concealed within a
10 garage, for example.

The base communication receiver 16 may be further capable of receiving a deactivation signal from the base terminal 20 and the controller 18 may be in electrical communication with any number of devices which would
15 facilitate deactivation of the vehicle 10, such the vehicle ignition or fuel system. As such, it is contemplated that the base terminal 20 may transmit a deactivation signal to the base communication receiver 16 via the data link. Upon receipt of the deactivation signal with the base
20 communication receiver 16, the controller 18 may process such signal and initiate the deactivation of the vehicle 10. It is contemplated that the method of deactivating the vehicle 10 via the initiation by the controller 18 is chosen from those well known to one of ordinary skill in
25 the art.

Additional modifications and improvements of the present invention may also be apparent to those of ordinary skill in the art. Thus, the particular combination of parts described and illustrated herein is intended to
30 represent only one embodiment of the present invention, and is not intended to serve as limitations of alternative devices within the spirit and scope of the invention.